



Acute Care Hospital Seasonal Influenza Vaccination Report 2010 – 2011

A report by the
Executive Office of Health and Human Services
Department of Public Health
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Seasonal Influenza Vaccination Report: Acute Care Hospitals
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Healthcare workers may be a source of transmission of the influenza virus in healthcare settings and the most effective method of preventing influenza and its potentially serious complications is annual immunization. Achieving and sustaining high influenza vaccination coverage among healthcare workers (HCWs) has been shown to reduce influenza infection and absenteeism among healthy HCWs, protects patients and leads to reduced disease burden and healthcare costs. Despite the strong recommendation of major public health agencies, professional societies and healthcare organizations for annual, universal immunization of healthcare workers against influenza, the overall rates of immunization among healthcare workers has remained low.

To address this serious threat to the safety of patients, in 2008 the Massachusetts Department of Public Health (MDPH) promulgated regulations mandating all licensed healthcare facilities to offer, free-of charge, annual influenza vaccine to all personnel (regular employees, contracted employees, volunteers, house staff and students), document receipt of influenza vaccine administered within and outside the facility or document the declination of immunization and report information to the Department, detailing compliance with the vaccination requirement, in accordance with reporting and data collection guidelines of the Commissioner.¹

Methodology

The healthcare associated infection (HAI) Program developed an excel spreadsheet to capture healthcare employee vaccination data for individual licensed healthcare facilities. The required data elements included total number of employees at the reporting licensed healthcare facility on December 31, 2010, total number of employees receiving seasonal influenza vaccination from the healthcare facility and outside the healthcare facility and the total number of healthcare employees with record of a signed declination form.

The overall vaccination rate (percentage) is calculated by dividing the number of healthcare employees vaccinated (numerator) by the total number of healthcare employees (denominator). The influenza vaccine could have been administered in the healthcare facility or the employee may have reported receiving the vaccine elsewhere (i.e. physician's office, clinic, health center, etc.) Additional analysis includes facility specific percentages for declination of influenza vaccination by healthcare employees.

To standardize the healthcare employee count used for the denominator, all licensed healthcare facilities were required to report the number of employees receiving a paycheck from the facility on December 31, 2010. For the purposes of the vaccination program, employee is defined as: individuals, both full-time and part-time, who are on the healthcare facility payroll as of December 31, 2010. This includes, but is not limited to: physicians, nurses, interns/residents, fellows, physician assistants, physical, occupational, respiratory and speech therapists, laboratory and operating room technicians, central supply staff, pharmacists, maintenance/environmental services staff, dietary staff, attendants/orderlies, secretarial and administrative staff; contract staff, whether or not such individuals provide direct patient care.

Important note: During the 2008-2009 influenza season MDPH collected data on "employee" vaccination status. The reporting requirement was expanded to include all "personnel" for the

¹ 105 CMR 130.00 Hospital Licensure; 105 CMR 140.000 Licensure of Clinics; 105 CMR 150.000 Licensing of Long-Term Care Facilities; and 105 CMR 145.000 Licensing of Out-of-Hospital Dialysis Units are available at www.mass.gov/dph.

2009-2010 season. Challenges described by hospitals in obtaining non-employee healthcare personnel influenza data resulted in modification of the reporting methodology and a return to collecting “employee” influenza vaccination data during the 2010-2011 season. To provide a more accurate analysis, the basis for comparison of data obtained during the 2010-2011 influenza season is data collected during the 2008-2009 influenza season.

Findings

Table 1. Healthcare Workers at Massachusetts Acute Care Hospitals Vaccinated during the 2010-2011 Influenza Season by Hospital Rate

		Mean (%)	Minimum (%)	Maximum (%)
Vaccinated		70.8	37.5	96.1
Declination Rate		20.1	3.4	36.4
Location Vaccinated				
At Hospital of Employment		60.6	36.9	85.2
Outside Hospital of Employment		10.2	0.5	25.5
Hospital Teaching Status*				
Major Teaching Hospital		73.1	37.5	96.1
Non-Teaching Hospital		70.1	46.2	88.4
Hospital Bed Size				
<=100		71.1	60.5	88.4
101-300		69.8	46.2	83.0
>300		75.3	37.5	96.1
Region				
Western		70.5	48.9	88.4
Central		70.3	46.2	83.9
Northeast		71.6	67.7	78.2
Metro		76.4	60.5	96.1
Boston		72.6	58.2	91.3
Southeast		63.3	37.5	83.4

*Teaching status was determined by hospital’s most recent National Healthcare Safety Network annual hospital survey. Major teaching status is defined as a hospital that is an important part of the medical school teaching program in which the majority of medical students rotate through multiple clinical services.

Table 1 represents the average rate of healthcare worker influenza vaccination with hospital as unit of analysis (all the individual hospital rates divided by the number of hospitals) and provides the average performance of hospitals overall by various hospital characteristics.

During the 2010-2011 influenza vaccination season, 70.8% of healthcare workers at Massachusetts acute care hospitals were documented as having received flu vaccine. This reflects vaccinations performed at the hospital and outside the hospital.

Location of Vaccination

On average, hospitals vaccinated the majority, 60.6%, of their healthcare workers (HCW) against influenza at the hospital. In 2008-2009, acute care hospitals vaccinated 53% of employees at the workplace. During the 2010-2011 influenza vaccination season, HCWs vaccinated outside the hospital accounted for 10.2% of a hospital's employees on average.

Type of Hospital

The mean percentage of HCWs vaccinated at teaching and non-teaching hospitals was similar, 73.1% and 70.1% respectively, during the 2010-2011 influenza vaccination season. This represents an increase from the 2008-2009 influenza vaccination season rate of 54% of healthcare employees at teaching hospitals and 33% of employees at non-teaching hospitals.

Hospital Size

Small (≤ 100 beds), medium (101-300 beds) and large (> 300 beds) documented vaccination of 71.7%, 69.8% and 75.3%, respectively. In 2008-2009 hospitals were categorized as 300 beds or less and greater than 300 beds, and the vaccination rate was 51% regardless of hospital size category.

Declinations

During the 2010-2011 influenza vaccination season, an average 20.1% of HCWs at acute care facilities declined vaccination. Hospitals did not collect vaccination declination information during the 2008-2009 influenza vaccination season.

Appendix 1. Additional Tables

Table 2. HCW Vaccination Rates at Acute Care Hospitals in Massachusetts during the 2010-2011 Influenza Vaccination Season

Acute Care Hospitals	Total Percentage Vaccinated	Percentage Declined
Addison Gilbert Hospital	72.7%	21.6%
Anna Jaques Hospital	67.7%	25.7%
Athol Memorial Hospital	83.9%	16.1%
Baystate Franklin Medical Center	74.6%	17.7%
Baystate Mary Lane Hospital	78.0%	21.3%
Baystate Medical Center	77.1%	20.7%
Berkshire Medical Center	73.5%	25.7%
BI Deaconess Hospital - Needham	76.8%	15.3%
Beth Israel Deaconess Medical Center	80.4%	19.6%
Beverly Hospital	75.4%	20.7%
Boston Medical Center	63.6%	36.4%
Brigham and Women's Hospital	73.6%	26.5%
Cambridge Health Alliance	79.0%	21.1%
Cape Cod Hospital	59.2%	10.0%
Carney Hospital	68.7%	23.1%
Charlton Memorial/Southcoast	56.1%	21.9%
Children's Hospital Boston	91.3%	11.4%
Clinton Hospital	46.2%	12.1%
Cooley Dickinson Hospital	73.7%	17.5%
Dana-Farber Cancer Institute	82.7%	17.3%
Emerson Hospital	79.8%	20.2%
Fairview Hospital	88.4%	11.7%
Falmouth Hospital	61.6%	8.6%
Faulkner Hospital	73.1%	26.0%
Good Samaritan Medical Center	70.6%	28.2%
Harrington Memorial Hospital	65.2%	21.6%
Health Alliance - Leominster Campus	73.2%	22.4%
Heywood Hospital	60.6%	5.7%
Holy Family Hospital	78.2%	29.1%
Holyoke Medical Center	68.8%	28.0%
Jordan Hospital	65.9%	12.6%
Lahey Clinic Medical Center	96.1%	3.4%
Lawrence General Hospital	76.1%	17.2%
Lawrence Memorial Hospital (Hallmark)	70.5%	29.5%

Lowell General Hospital	70.9%	12.3%
Marlborough Hospital	74.1%	25.9%
Martha's Vineyard Hospital	83.4%	16.6%
Mass Eye & Ear Infirmary	67.9%	23.7%
Massachusetts General Hospital	82.8%	14.4%
Melrose Wakefield Hospital (Hallmark)	69.9%	30.2%
Mercy Medical Center	48.9%	4.3%
Merrimack Valley Hospital	68.2%	28.4%
MetroWest Medical Center	73.7%	16.1%
Milford Regional Medical Center	79.9%	18.0%
Milton Hospital	76.1%	23.9%
Morton Hospital & Medical Center	70.3%	26.7%
Mount Auburn Hospital	70.8%	13.1%
Nantucket Cottage Hospital	74.0%	6.0%
Nashoba Valley Medical Center	81.1%	18.9%
New England Baptist Hospital	58.2%	29.8%
Newton Wellesley Hospital	83.0%	17.4%
Noble Hospital	56.1%	20.7%
North Adams Regional Hospital	67.3%	21.6%
Norwood Hospital	77.7%	20.1%
Quincy Medical Center	63.7%	31.3%
Saint Anne's Hospital	64.9%	33.2%
Saints Medical Center	68.6%	26.5%
Salem - North Shore Medical Center	71.5%	25.2%
Shriners Hospital for Children, Springfield	70.4%	27.8%
Shriners Hospitals for Children - Boston	77.2%	18.7%
Signature Healthcare Brockton Hospital	37.5%	6.0%
South Shore Hospital	60.5%	14.0%
St Luke's Hospital/Southcoast	47.8%	27.1%
St Vincent Hospital	76.6%	21.7%
St. Elizabeth's Medical Center	60.7%	29.6%
Sturdy Memorial Hospital	79.7%	20.4%
Tobey Hospital/Southcoast	52.2%	18.6%
Tufts Medical Center	63.3%	3.5%
UMass Memorial Medical Center	66.4%	30.7%
Union - North Shore Medical Center	69.2%	23.1%
Winchester Hospital	81.5%	19.7%
Wing Memorial Hospital & Medical Centers	69.7%	14.1%

Table 3. Healthcare Employees Vaccinated during the 2010-2011 Influenza Season (n=181,990)

	N	Percentage
Vaccinated	134,306	73.8%
Declined	35,900	19.7%
Location Vaccinated		
At Hospital of Employment	115,654	63.5%
Outside Hospital of Employment	18,652	10.2%
Hospital Teaching Status*		
Major Teaching Hospital	93,798	76.6%
Non-Teaching Hospital	40,508	68.0%
Hospital Bed Size		
<=100	14,377	67.1%
101-300	45,785	71.0%
>300	74,144	77.2%
Region		
Western	13,940	71.8%
Central	12,399	69.5%
Northeast	12,438	72.1%
Metro	24,085	78.9%
Boston	59,877	77.1%
Southeast	11,567	60.1%

*Teaching status was determined by hospital's most recent National Healthcare Safety Network annual hospital survey. Major teaching status is defined as a hospital that is an important part of the medical school teaching program in which the majority of medical students rotate through multiple clinical services.

Table 3 represents data by employees pooled across hospitals as the unit of analysis (all employees vaccinated divided by all employees) and provides the rate of immunization of hospital employees by various hospital characteristics.